

WHAT IS CLAIMED IS:

1. A method for scheduling the execution of one or more analysis tools operating on performance data of a railroad locomotive, comprising:

- a) storing the performance data;
- 5 b) selecting the highest priority performance data;
- c) establishing a limit on the number of simultaneous executions for each of the one or more analysis tools;
- d) providing the selected performance data to one or more of the analysis tools if the simultaneous execution limit for that tool has not been reached; and
- 10 e) creating a case based on the results derived from the one or more analysis tools.

2. The method of claim 1 wherein the performance data is parametric performance data for the locomotive.

3. The method of claim 1 wherein the performance data is fault data for the locomotive.

4. The method of claim 1 wherein the output from the one or more analysis tools is locomotive repair recommendations in response to the selected performance data.

5. The method of claim 1 wherein the step b) comprises:

20 b1) determining that all performance data related to a specific fault or a specific anomalous condition has been stored;

b2) assigning a priority ranking to each set of performance data; and

b3) selecting the highest priority set of performance data therefrom.

6. The method of claim 1 wherein the step b) comprises:

25 b1) segregating the performance data into high-priority data and normal-priority data; and

b2) selecting the highest priority performance data from each of the high-priority data and the normal-priority data.

7. The method of claim 6 wherein the step c) includes:

30 c1) establishing a limit on the number of simultaneous high-priority executions for each analysis tool; and

c2) establishing a limit on the number of simultaneous normal-priority executions for each analysis tool.

8. The method of claim 1 wherein each of the one or more analysis tools processes the performance data in parallel.

5 9. The method of claim 1 including:

f) establishing a look-back period, wherein the selected performance data describes the locomotive performance during the look-back period;

g) determining whether the current case is substantially similar to one or more previous cases; and

10 h) if the current case is substantially similar to previous cases, modifying the look-back period such that said modified look-back period begins after implementation of the previous cases, wherein the selected performance data describes the locomotive performance during the modified look-back period.

10. The method of claim 1, including:

15 f) establishing a case combining period;

g) determining whether there are any open cases during the case combining period;

h) if there is at least one open case during the case combining period, combining the current case with the open case;

20 i) if there is not at least one open case during the case combining period, analyzing the outputs from the one or more tools to determine whether the outputs are substantially similar to those in open cases;

j) if there is a substantial similarity, combining the outputs from the one or more analysis tools with the substantially similar case; and

25 k) if there is not a substantially similar case, creating a new case including the outputs from the one or more analysis tools. ✓

11. A computer program for scheduling the execution of one or more analysis tools operating on performance data of a railroad locomotive, comprising:

a) storing the performance data;

30 b) selecting the highest priority performance data;

c) establishing a limit on the number of simultaneous executions for each of the one or more analysis tools;

d) providing the selected performance data to one or more of the analysis tools if the simultaneous execution limit for that tool has not been reached; and

e) creating a case based on the results derived from the one or more analysis tools.

5           12. The computer program of claim 11 wherein the step b) comprises the steps of:

b1) segregating the performance data into high-priority data and normal-priority data; and

10           b2) selecting the highest priority performance data from each of the high-priority data and the normal-priority data;

wherein the step c) comprises:

c1) establishing a limit on the number of simultaneous high-priority executions for each analysis tool; and

15           c2) establishing a limit on the number of simultaneous normal-priority executions for each analysis tool.

13. The computer program of claim 11 including:

f) establishing a look-back period, wherein the selected performance data describes the locomotive performance during the look-back period;

20           g) determining whether the current case is substantially similar to one or more previous cases; and

h) if the current case is substantially similar to previous cases, modifying the look-back period such that said modified look-back period begins after implementation of the previous cases, wherein the selected performance data describes the locomotive performance during the modified look-back period.

25           14. The computer program of claim 11, including:

f) establishing a case combining period;

g) determining whether there are any open cases during the case combining period;

30           h) if there is at least one open case during the case combining period, combining the current case with the open case;

i) if there is not at least one open case during the case combining period, analyzing the outputs from the one or more tools to determine whether the outputs are substantially similar to those in open cases;

j) if there is a substantial similarity, combining the outputs from the one or more analysis tools with the substantially similar case; and

k) if there is not a substantially similar case, creating a new case including the outputs from the one or more analysis tools.

15. An apparatus for scheduling the execution of one or more analysis tools operating on performance data of a railroad locomotive, wherein each analysis tool includes a predetermined limit on the number of simultaneous executions of the tool, said apparatus comprising:

a storage device for storing the performance data;

a controller for selecting the highest priority performance data from said storage device and for providing the selected performance data as an input to one or more of the analysis tools if the simultaneous execution limit for that tool has not been reached; and

a case creator for creating a case combining the results from the one or more analysis tools.

16. The apparatus of claim 15 wherein the selector segregates the performance data into high-priority data and normal-priority data, and selects the highest priority performance data from each of the high-priority data and the normal-priority data.

17. The apparatus of claim 15 including a look-back period, wherein the selected performance data describes the locomotive performance during the look-back period;

a comparator for determining whether the current case is substantially similar to one or more previous cases, and if the current case is substantially similar to previous cases, modifying the look-back period such that said modified look-back period begins after implementation of the previous cases, wherein the selected performance data describes the locomotive performance during the modified look-back period.

18. The apparatus of claim 15, including a case combining period;

a processor for determining whether there are any open cases during said case combining period, and if there is at least one open case during said case combining period, for combining the current case with the open case;

5 a comparator responsive to said processor such that if there is not at least one open case during the case combining period, for analyzing the outputs from the one or more tools to determine whether the outputs are substantially similar to those in open cases, and if there is a substantial similarity, combining the outputs from the one or more analysis tools with the substantially similar case; and

10 a case creator responsive to said comparator for creating a new case including the outputs from the one or more analysis tools if there is not a substantially similar case.

19. An apparatus for scheduling the execution of one or more analysis tools operating on performance data of a railroad locomotive,

storage means for storing the performance data;

15 segregating means for segregating the performance data into high-priority data and normal-priority data;

selection means for selecting the highest priority performance data from the high-priority data and normal-priority data;

20 first limiting means for establishing a limit on the number of simultaneous high-priority executions for each analysis tool; and

second limiting means for establishing a limit on the number of simultaneous normal-priority executions for each analysis tool.